

AMENDMENTS TO THE CLAIMS

1. (Previously Presented) An isolated gene encoding:

(a) a protein having the amino acid sequence listed as SEQ ID NO:2 of the Sequence Listing; or

(b) a protein having at least 90% identity with the amino acid sequence listed as SEQ ID NO:2 of the Sequence Listing through the conservative substitution of one or more amino acids and also binding to an antibody or an antibody fragment that is active to induce granulocyte colony-stimulating factor.

2. (Previously Presented) An isolated gene having:

(a) the nucleotide sequence listed as SEQ ID NO:1 of the Sequence Listing;

(b) a nucleotide sequence which encodes a protein having at least 90% identity with the amino acid sequence listed as SEQ ID NO:2 of the Sequence Listing through the conservative substitution of one or more amino acids and that can bind to an antibody or an antibody fragment this is active to induce granulocyte colony-stimulating factor; or

(c) a nucleotide sequence which hybridizes with DNA having the nucleotide sequence listed as SEQ ID NO:1 of the Sequence Listing under stringent conditions of 6X SSC, 5X Denhardt's solution, 0.5% SDS, 25-68°C or 0-50% formamide, 6X SSC, 0.5% SDS, 25-68°C and which encodes a protein that can bind to an antibody or an antibody fragment that is active to induce granulocyte colony-stimulating factor.

3-4. (Cancelled)

5. (Previously Presented) A gene according to claim 1 or 2, wherein the antibody that is active to induce granulocyte colony-stimulating factor is the monoclonal antibody produced by a hybridoma of the cell line deposited as FERM BP-6103.

6. (Previously Presented) A gene according to claim 1, which is a mouse gene.

7. - 8. (Cancelled)

9. (Previously Presented) Any of the following purified proteins:

(a) a protein having the amino acid sequence listed as SEQ ID NO:2 of the Sequence Listing;

(b) a protein having at least 90% identity with the amino acid sequence listed as SEQ ID NO:2 of the Sequence Listing through the conservative substitution of one or more amino acids and also binding to an antibody or an antibody fragment that is active to induce granulocyte colony-stimulating factor; or

(c) a protein that is encoded by the DNA which hybridizes with DNA having the nucleotide sequence listed as SEQ ID NO:1 of the Sequence Listing under stringent conditions of 6X SSC, 5X Denhardt's solution, 0.5% SDS, 25-68°C or 0-50% formamide, 6X SSC, 0.5% SDS, 25-68°C and that binds to an antibody or an antibody fragment that is active to induce granulocyte colony-stimulating factor.

10. (Cancelled)

11. (Previously Presented) A purified protein according to claim 9, wherein the antibody that is active to induce granulocyte colony-stimulating factor is the monoclonal antibody produced by a hybridoma of the cell line deposited as FERM BP-6103.

12. (Previously Presented) A purified protein according to claim 9, which is a mouse protein.

13. -17. (Cancelled)

18. (Previously Presented) A recombinant vector containing a gene according to claim 1.

19. (Previously Presented) A transformed cell comprising a recombinant vector that contains the according to claim 1.

20. (Previously Presented) An isolated receptor for a substance that can induce production of granulocyte colony-stimulating factor, wherein the receptor comprises a protein according to claim 9 and is present in a cell which can produce granulocyte colony-stimulating factor.

21. (Currently Amended) A screening method for ~~any of the following substances (a)-(e)~~ which comprises a substance, which can bind to the protein according to claim 9 or the receptor according to claim 20, which comprises:

(i) ~~measuring binding between a potential substance and a protein according to claim 9 or a receptor according to claim 20;~~ providing a potential substance;

(ii) ~~measuring effects of the potential substance via a receptor according to claim 20, or exposing the potential substance to said protein or receptor; and~~

(iii) ~~comparing the structure of the potential substance and the structure of a protein according to claim 9;~~ testing for specific binding.

~~wherein the substances (a)-(e) are:~~

~~(a) a substance which can bind to a receptor that can induce production of granulocyte colony-stimulating factor, wherein the substance, as a result of its binding to the receptor, is capable of causing a change in the receptor structure, transmitting signals into the cell via the receptor, and thus inducing production of granulocyte colony-stimulation factor;~~

~~(b) a substance which can bind to a receptor that can induce production of granulocyte colony-stimulating factor, wherein the substance, and as a result of its binding to the receptor, the substance can inhibit the binding of the receptor to another substance that can~~

~~induce production of granulocyte colony stimulating factor, and wherein the substance itself does not induce production of granulocyte colony stimulation factor; or~~

~~(e) a substance which can bind to a receptor that can induce production of granulocyte colony stimulating factor, wherein said substance, as a result of its binding to the receptor, can inhibit the binding of the receptor to another substance that can induce production of granulocyte colony stimulating factor, and wherein the substance itself blocks production of granulocyte colony stimulating factor.~~

22. - 23. (Cancelled)

24. (Currently Amended) A ~~pharmaceutical~~ composition comprising a gene according to claim 1, a protein according to claim 9, or a receptor according to claim 20.

25.- 28. (Cancelled)

29. (Previously Presented) The receptor of claim 20, wherein the cell which can produce granulocyte colony-stimulating factor is a macrophage.

30. (Cancelled)

31. (Currently amended) ~~The~~ An isolated gene ~~of claim 1~~ which encodes a protein having at least 95% identity with the amino acid sequence listed as SEQ ID NO:2 of the Sequence Listing through the conservative substitution of one or more amino acids **and also binding to an antibody or an antibody fragment that is active to induce granulocyte colony-stimulating factor.**

32. (Cancelled)

33. (Previously Presented) The purified protein of claim 9 which has at least 95% identity with the amino acid sequence listed as SEQ ID NO:2 of the Sequence Listing through the conservative substitution of one or more amino acids.

34. (Previously Presented) An isolated receptor according to claim 20, wherein the substance that can induce production of granulocyte colony-stimulating factor is a monoclonal antibody or an antibody fragment.

35. (Previously Presented) An isolated receptor according to claim 20, wherein the substance that can induce production of granulocyte colony-stimulating factor is a monoclonal antibody that is produced by a hybridoma of the cell line deposited as FERM BP-6103 or an antibody fragment thereof.

36. (New) A screening method for a substance that increases an amount of G-CSF production, comprising:

- i) providing a potential substance;
- ii) exposing the potential substance to the receptor according to claim 20, which is present in a cell, which can produce G-CSF;
- iii) measuring an amount of G-CSF production by said cell; and
- iv) selecting a substance, which an amount of G-CSF production by said cell is increased as a result of binding of said substance to the receptor, when compared to the case in the absence of said substance.

37. (New) An isolated gene which encodes a protein having at least 98% identity with the amino acid sequence listed as SEQ ID NO:2 of the Sequence Listing through the conservative substitution of one or more amino acids and also binding to an antibody or an antibody fragment that is active to induce granulocyte colony-stimulating factor.